NewsRelease

National Aeronautics and
Space Administration

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For Release: April 19, 2001

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RELEASE NO. 01-032

DEVELOPING RENEWABLE ENERGY TECHNOLOGIES

NASA data-supported software tool receives international interest

NASA's global satellite data are helping people around the world design and develop new technologies for exploiting natural renewable energy sources. Particularly well-suited for under-developed countries, these technologies better enable the conversion of sunlight, for example, into electricity for cooking food, lighting homes, refrigerating medicines, and a host of other practical uses. One product supported by NASA data is receiving international attention at the Summit of the Americas meeting, April 19-22.

Data from the Surface Meteorology and Solar Energy (SSE) Project are essential to the global application of RETScreen®, a software tool developed by CANMET Energy Diversification Research Laboratory (CEDRL) for Natural Resources Canada (NRCan) to help evaluate the viability of implementing renewable energy technologies. NRCan, which has used SSE data since November 1999, will promote RETScreen® at the Summit in Quebec City, Canada. This meeting, with 34 heads of state scheduled to attend, will stress the development of a focused agenda to meet collective challenges, including approaches to energy issues, for nations in the Western Hemisphere.

This topic is particularly relevant today as local, state, and national governments grapple with issues of cost and distribution of electricity. Even as there are rolling blackouts across California and states are debating energy deregulation issues, there are millions of people in lesser-developed countries who must spend more money on fuel for cooking than they spend on food itself.

"This has been a great effort by NASA, and they deserve a lot of credit for making their very valuable data available in a user friendly format to users around the globe," said Gregory L. Leng, section head of the Renewable Energy Capacity-Building Program in CEDRL.

The SSE Project found a way to translate satellite data into formats that are readily usable by commercial companies, like NRCan. This was a major breakthrough for engineers who design systems that convert natural energy into electricity because these data not only provide a global perspective, they also fill the voids from remote areas where there are no ground-based monitoring stations and therefore no available data.

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"The goal of the SSE Project is to put state-of-the-art, satellite derived solar and meteorology data into the hands of individuals who are involved in the research and analysis of the feasibility of renewable energy technologies," said Roberta DiPasquale, the SSE marketing manager. The SSE Project, managed by NASA Langley Research Center in Hampton, Virginia, works with other government and private organizations to develop the commercial potential of NASA satellite measurements. RETScreen® is just one of the many ways the SSE team achieves their goal.

"The SSE data set has been incorporated into coursework at educational institutions around the world, used by students for thesis papers and analyzed by grassroots and international organizations for possible solar cooking and rural electrification projects. It has even been accessed by architects and heating, ventilation, and air conditioning engineers," DiPasquale said.

The SSE team converts scientific measurements into data useful to the renewable energy community. Users can create resource maps based on global satellite and ground data for a specific area at a certain time. SSE data are available via an innovative data delivery system at http://eosweb.larc.nasa.gov/sse/. Since June 1999, the SSE Web site has generated 315,000 hits, and approximately 2000 registered users have downloaded over 22,600 data documents.

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